

CLAIMS:

1. An electronic device workpiece processing apparatus comprising:

a workpiece holder adapted to receive an electronic device workpiece having an electrical coupling, the workpiece holder including an electrical coupling configured to electrically couple with the electrical coupling of the electronic device workpiece and communicate signals between the electronic device workpiece and the workpiece holder.

2. The electronic device workpiece processing apparatus according to claim 1 further comprising a data gathering device coupled with the electrical coupling of the workpiece holder and configured to receive the signals.

3. The electronic device workpiece processing apparatus according to claim 2 further comprising a contact plate configured to communicate the signal intermediate the workpiece holder and the data gathering device.

4. The electronic device workpiece processing apparatus according to claim 1 wherein the workpiece holder includes a first surface, a second surface, and an electrical interconnect configured to electrically couple the first surface and the second surface.

1           5.    The electronic device workpiece processing apparatus  
2 according to claim 4 wherein the first surface of the workpiece holder  
3 is configured to face a received electronic device workpiece and the  
4 second surface is configured to face a chuck.

5  
6           6.    The electronic device workpiece processing apparatus  
7 according to claim 1 wherein the workpiece holder includes a plurality  
8 of electrical couplings adapted to couple with a plurality of electrical  
9 couplings of the electronic device workpiece.

10  
11           7.    The electronic device workpiece processing apparatus  
12 according to claim 1 wherein the workpiece holder comprises a chuck.

13  
14           8.    The electronic device workpiece processing apparatus  
15 according to claim 1 wherein the workpiece holder comprises a chuck  
16 configured to receive a calibration workpiece and a production  
17 workpiece.

18  
19           9.    The electronic device workpiece processing apparatus  
20 according to claim 8 wherein the workpiece holder and the calibration  
21 workpiece include vacuum chambers adapted to receive a vacuum to  
22 couple the calibration workpiece and the production workpiece with the  
23 chuck.  
24

1           10. The electronic device workpiece processing apparatus  
2 according to claim 1 wherein the workpiece holder comprises an  
3 intermediate member adapted to couple with a chuck.

4  
5           11. The electronic device workpiece processing apparatus  
6 according to claim 1 wherein the workpiece holder includes a vacuum  
7 chamber adapted to receive a vacuum to couple a received electronic  
8 device workpiece with the workpiece holder.

9  
10           12. The electronic device workpiece processing apparatus  
11 according to claim 1 wherein the electrical interconnect comprises a  
12 conductive column configured to extend outward from plural surfaces of  
13 the chuck.

14  
15           13. The electronic device workpiece processing apparatus  
16 according to claim 12 further comprising a contact plate including  
17 circuitry configured to provide electrical connection with the conductive  
18 column.

1 14. An electronic device workpiece processing intermediate  
2 member adapted to receive an electronic device workpiece having an  
3 electrical coupling and couple with a chuck having an electrical coupling,  
4 the intermediate member comprising:

5 an electrical interconnect configured to electrically connect the  
6 electrical coupling of the electronic device workpiece with the electrical  
7 coupling of the chuck.

8  
9 15. The electronic device workpiece processing intermediate  
10 member according to claim 14 wherein the intermediate member includes  
11 a plurality of electrical interconnects configured to electrically connect  
12 a plurality of electrical couplings of an electronic device workpiece and  
13 a chuck.

14  
15 16. The electronic device workpiece processing intermediate  
16 member according to claim 14 wherein the electrical interconnect  
17 comprises a pogo pin.

18  
19 17. The electronic device workpiece processing intermediate  
20 member according to claim 14 wherein the electrical interconnect  
21 comprises a wire.

18. An electronic device workpiece processing apparatus comprising a workpiece holder adapted to receive an electronic device workpiece and the workpiece holder having circuitry configured to communicate a process signal received from a received electronic device workpiece and the process signal containing information regarding processing of the received electronic device workpiece.

19. An electronic device workpiece processing apparatus comprising:

a chuck including a surface, an electrical coupling adjacent the surface, and electrical interconnect configured to connect with the electrical coupling of the chuck and conduct a signal within the chuck;

an intermediate member having a first surface and a second surface and the intermediate member including:

an electrical coupling adjacent the first surface and configured to couple with the electrical coupling of the chuck;

an electrical coupling adjacent the second surface; and

an electrical interconnect configured to connect the electrical coupling adjacent the first surface and the electrical coupling adjacent the second surface; and

an electronic device workpiece configured to couple with the second surface of the intermediate member, the electronic device workpiece including a sensor and an electrical coupling configured to

1 provide electrical connection of the sensor with the electrical coupling  
2 of the second surface of the intermediate member.

3  
4 20. The electronic device workpiece processing apparatus  
5 according to claim 19 further comprising a data gathering device coupled  
6 with the electrical coupling of the chuck and configured to receive the  
7 signal.

8  
9 21. The electronic device workpiece processing apparatus  
10 according to claim 20 further comprising a contact plate configured to  
11 communicate the signal intermediate the chuck and the data gathering  
12 device.

13  
14 22. The electronic device workpiece processing apparatus  
15 according to claim 19 wherein the sensor comprises a resistance  
16 temperature device.

17  
18 23. The electronic device workpiece processing apparatus  
19 according to claim 19 wherein the electronic device workpiece comprises  
20 a calibration workpiece.  
21  
22  
23  
24

1        24. The electronic device workpiece processing apparatus  
2 according to claim 19 wherein the electrical interconnect comprises a  
3 conductive column configured to extend outward from plural surfaces of  
4 the chuck.

5  
6        25. The electronic device workpiece processing apparatus  
7 according to claim 24 further comprising a contact plate including  
8 circuitry configured to provide electrical connection with electrical  
9 couplings of the chuck.

1        26. An electronic device workpiece processing apparatus  
2 comprising:

3        a chuck including a surface, a plurality of electrical couplings  
4 adjacent the surface, and a plurality of electrical interconnects configured  
5 to connect with respective electrical couplings of the chuck and conduct  
6 signals within the chuck;

7        an intermediate member having a first surface and a second  
8 surface and the intermediate member including:

9        a plurality of electrical couplings adjacent the first surface  
10 and configured to couple with respective electrical couplings of the  
11 chuck;

12        a plurality of electrical couplings adjacent the second  
13 surface; and

14        a plurality of electrical interconnects configured to electrically  
15 connect the electrical couplings of the first surface with respective  
16 electrical couplings of the second surface;

17        a calibration workpiece configured to couple with the second  
18 surface of the intermediate member, the calibration workpiece including  
19 a plurality of resistance temperature devices configured to generate  
20 process signals, and a plurality of electrical connections configured to  
21 electrically connect the resistance temperature devices with respective  
22 electrical couplings of the second surface of the intermediate member;  
23 and  
24

1 a data gathering device coupled with the electrical interconnects  
2 of the chuck and configured to receive the process signals from the  
3 resistance temperature devices through the intermediate member and the  
4 chuck.

5  
6 27. A method of communicating signals within an electronic  
7 device workpiece processing apparatus, the method comprising:

8 providing a workpiece holder adapted to couple with an electronic  
9 device workpiece; and

10 communicating signals through the workpiece holder.

11  
12 28. The method according to claim 27 further comprising  
13 coupling circuitry of an electronic device workpiece with circuitry of the  
14 workpiece holder.

15  
16 29. The method according to claim 28 further comprising  
17 breaking the coupled circuitry of the electronic device workpiece and  
18 the circuitry of the workpiece holder.

19  
20 30. The method according to claim 27 further comprising  
21 coupling an electronic device workpiece with the workpiece holder using  
22 a vacuum.

1        31. The method according to claim 27 further comprising  
2        coupling a calibration workpiece and a production workpiece with the  
3        workpiece holder.

4  
5        32. The method according to claim 27 further comprising  
6        receiving an electronic device workpiece within the workpiece holder.

7  
8        33. The method according to claim 27 further comprising  
9        communicating the signal intermediate the workpiece holder and an  
10       electronic device workpiece using an intermediate member.

11  
12       34. The method according to claim 27 further comprising  
13       receiving the signal within the workpiece holder from an electronic  
14       device workpiece.

15  
16       35. The method according to claim 27 wherein the providing  
17       comprises providing a chuck.

18  
19       36. The method according to claim 27 further comprising:  
20       sensing a process condition of an electronic device workpiece; and  
21       generating the signal responsive to the sensing.  
22  
23  
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1           37. The method according to claim 36 wherein the sensing  
2 comprises sensing temperature at a plurality of positions upon a surface  
3 of the electronic device workpiece.

4  
5           38. A method of communicating signals within an electronic  
6 device workpiece processing apparatus, the method comprising:

7           providing a workpiece holder;

8           providing an electronic device workpiece including a sensor;

9           electrically coupling the sensor of the electronic device workpiece  
10 with the workpiece holder;

11           sensing a condition using the sensor;

12           generating a signal using the sensor responsive to the sensing; and

13           conducting the signal through the workpiece holder following the  
14 coupling.

15  
16           39. The method according to claim 38 wherein the coupling  
17 comprises coupling circuitry of the electronic device workpiece with  
18 circuitry of the workpiece holder.

19  
20           40. The method according to claim 38 further comprising  
21 breaking the coupling of the sensor and the workpiece holder.

22  
23           41. The method according to claim 38 further comprising  
24 receiving the electronic device workpiece within the workpiece holder.

1        42. The method according to claim 38 wherein the coupling  
2 comprises coupling using an intermediate member.

3  
4        43. The method according to claim 38 wherein the providing a  
5 workpiece holder comprises providing a chuck configured to receive an  
6 electronic device workpiece.

7  
8        44. The method according to claim 38 wherein the sensing  
9 comprises sensing temperature.

10  
11       45. A method of communicating signals within an electronic  
12 device workpiece processing apparatus, the method comprising:  
13       providing a workpiece holder having circuitry;  
14       providing an electronic device workpiece having circuitry; and  
15       communicating signals intermediate the circuitry of the electronic  
16 device workpiece and the circuitry of the workpiece holder.

17  
18       46. The method according to claim 45 further comprising  
19 coupling the circuitry of the electronic device workpiece with the  
20 circuitry of the workpiece holder.

21  
22       47. The method according to claim 46 wherein the coupling  
23 comprises coupling using an intermediate member.  
24

1 48. The method according to claim 46 further comprising  
2 breaking the coupling of the circuitry of the electronic device workpiece  
3 and the circuitry of the workpiece holder.  
4

5 49. The method according to claim 45 wherein the providing a  
6 workpiece holder comprises providing a chuck configured to receive an  
7 electronic device workpiece.  
8

9 50. The method according to claim 45 further comprising  
10 receiving the electronic device workpiece within the workpiece holder.  
11

12 51. The method according to claim 45 further comprising:  
13 sensing a process condition of the electronic device workpiece; and  
14 generating the signal responsive to the sensing.  
15

16 52. The method according to claim 51 wherein the sensing  
17 comprises sensing temperature at a plurality of positions upon a surface  
18 of the electronic device workpiece.

19 ADD  
20 B2  
21 Add  
22 C3  
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